What is claimed is:

1. A method for methylating a gene of interest in a mammalian cell comprising:

exposing said cell to an siRNA molecule which is specific for a target sequence in said gene of interest, wherein said siRNA directs methylation of said gene of interest.

2. The method of claim 1, wherein said target sequence is located in a promoter region of said gene of interest.

3. The method of claim 1, wherein said target sequence is located in a coding region of said gene of interest.

4. The method of claim 1, wherein said siRNA directs methylation of a promoter region of said gene of interest.

5. The method of claim 3, wherein said target sequence comprises a CpG island.

6. The method of claim 1, wherein said siRNA contains about 19-28 base pairs.

7. The method of claim 6, wherein said siRNA contains about 21 base pairs.

8. The method of claim 1, wherein said mammalian cell is a human cell.

9. The method of claim 1, wherein said gene of interest is an infectious agent gene.

27

10. The method of claim 8, wherein said infectious agent is viral.

11. The method of claim 1, wherein said cell is exposed to said siRNA by introducing into said cell DNA sequences encoding a sense strand and a antisense strand of said siRNA, wherein said siRNA is expressed in the cell.

12. The method of claim 11, wherein said introducing is accomplished using at least one vector.

13. The method of claim 12, wherein said vector is a plasmid vector.

14. The method of claim 12, wherein said vector is a viral vector.

15. The method of claim 14, wherein said viral vector is a retroviral vector, a lentiviral vector, or an adenoviral vector.

16. The method of claim 12, wherein said vector is an adeno-associated vector.

17. The method of claim 11, wherein said introducing takes place in vivo.

18. The method of claim 11, wherein said introducing takes place in vitro.

19. The method of claim 11, wherein said introducing is achieved via transformation, transduction, transfection, or

infection.

20. The method of claim 11, wherein said introducing is achieved via a liposome.

21. The method of claim 11, wherein said DNA sequences are generated by PCR.

22. The method of claim 1, wherein said gene is a RASSF1 gene.

23. The method of claim 12, wherein said DNA sequences are in the same vector.

24. The method of claim 12, wherein said DNA sequences are in separate vectors.

25. The method of claim 1, wherein said method causes inactivation of said gene of interest.

26. The method of claim 1, wherein said method causes activation of said gene of interest.